EXHIBIT 1
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 1              UNITED STATES DISTRICT COURT
 2            NORTHERN DISTRICT OF CALIFORNIA
 3                  SAN JOSE DIVISION
 4   _____
                                       )
 5   CHASOM BROWN, WILLIAM BYATT,      )CASE NO.:
     JEREMY DAVIS, CHRISTOPHER         )
 6   CASTILLO, and MONIQUE TRUJILLO,   )5:20-cv-03664-
     individually and on behalf of     )LHK-SVK
 7   all other similarly situated,     )
                                       )
 8                   Plaintiffs,       )
                                       )
 9          v.                         )
                                       )
10   GOOGLE, LLC,                      )
                                       )
11                   Defendant.        )
     _____)
12
13
14
15
16          DEPOSITION OF GLENN BERNTSON
17                   VOLUME I
18        REMOTELY IN LOS ANGELES, CALIFORNIA
19             FRIDAY, MARCH 18, 2022
20
21
22
23   REPORTED BY:   NATALIE PARVIZI-AZAD, CSR, RPR, RSR
24                  CSR NO. 14125
25   JOB NO.:       5142481
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 7   ALL OTHER SIMILARLY SITUATED,   )
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 8                      Plaintiffs,  )
                                     )
 9              v.                   )
                                     )
10   GOOGLE, LLC,                    )
                                     )
11                      Defendant.   )
     _____)
12
13
14
15
16      DEPOSITION OF GLENN BERNTSON, VOLUME I
17      TAKEN ON BEHALF OF THE PLAINTIFFS
18      REMOTELY VIA ZOOM VIDEO CONFERENCING, IN
19      LOS ANGELES, CALIFORNIA, BEGINNING AT
20      10:36 A.M. AND ENDING AT 5:01 P.M., ON
21      FRIDAY, MARCH 18, 2022, BEFORE
22      NATALIE PARVIZI-AZAD, CERTIFIED SHORTHAND
23      REPORTER NUMBER 14125.
24
25
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 1    you just said about PPID never being linked to

 2    any ID.

 3            So how does that differ from a

 4    PPID-mapped Biscotti?  What's the difference in

 5    how you're using the word linked from mapped       14:39:47

 6    there?

 7        A.  No, what I described is that its

 8    representation in different parts of the system

 9    will change, but it's still logically the same

10    ID.  And what I mean by that is the PPID, when     14:40:01

11    a publisher passes us this thing to represent

12    their user, it comes in as a string.  And when

13    we receive this value, we hash it, and then we

14    take the hashed value, the hashed string

15    provided by the publisher, we then add to it       14:40:28

16    the network ID of the publisher.

17            And so with this, we have sort of what

18    is, to the publisher, a unique representation

19    of the user.  And when we store it, we store it

20    with the publisher identify -- the publisher       14:40:48

21    network code, which is unique to that

22    publisher.  And when this comes in the first

23    time, we generate a new random number, and we

24    associate that random number -- which is an

25    integer -- and we store it alongside what we       14:41:06
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 1      get from the publisher.

 2              Now, internally, all of Google's

 3      systems for when we're building profiles, or

 4      doing frequency capping, we always expect a

 5      user ID to be an integer.  Externally, if a        14:41:20

 6      publisher is generating a PPID from an e-mail

 7      address, an e-mail address is not a number.

 8      And if they then hash it, they hash it into,

 9      say, another string, which is an opaque

10      reputation with a one-way mapping from the         14:41:41

11      prior string, and pass that to us.

12              We have to somehow represent that

13      string as an integer.  So the way we do that is

14      by creating what's called a mapping table.  And

15      what the mapping table is is it allows us to       14:42:00

16      have a string reputation that comes from a

17      publisher, come into our system, that we then

18      add the publisher ID.

19              And we add the publisher ID to make

20      sure that, if two different publishers have the    14:42:13

21      same e-mail address and they happen to use the

22      same hashing function, it is possible that two

23      different publishers can pass us what -- a PPID

24      value that's the same for the same user.  But

25      we explicitly partition these IDS by a             14:42:31
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1   publisher. And the way in we partition them is

2   we store the value they send us along with the

3   publisher ID.

4   And so, whenever we're looking up a

5   PPID, when we receive an ad request with a   14:42:40

6   value from the publisher, we look up the

7   concatenation of their string representation of

8   the user and the network ID.

9   Now, to represent that as a number

10   internally in our systems, that's what the   14:42:56

11   mapping table is. When you say a "mapped

12   Biscotti," this is problem with names. And

13   that is, "Biscotti" was originally named for

14   the internal system we use to generate random

15   numbers. And that internal system that   14:43:13

16   generated a random integer is also what we

17   happen to call the cookie that we publish

18   client-side. Our internal systems that use

19   these integers -- because the system generates

20   the random number itself is a Biscotti ID   14:43:36

21   generator, even though it's really just

22   generating a random number, the name here is a

23   mapped Biscotti ID. That mapped Biscotti ID is

24   never present external to our systems. It's

25   only the internal representation of exactly the   14:43:57

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 1    value passed by the publisher.  So it's not

 2    (indiscernible) with another one.  It's the

 3    same ID, in a different form, internal to our

 4    systems.

 5         Q.  Where do these mapping tables sit?        14:44:06

 6         A.  I believe they are stored in ██ now.

 7    They were originally stored in ██████.

 8         Q.  So with respect to a PPID or using

 9    that -- the other term, a PPID-mapped Biscotti,

10    how does Google view that, if at all, in           14:44:51

11    connection with that conversion tracking?

12         A.  So we don't, really.  And here is the

13    thing.  Conversion tracking is an advertiser

14    feature.  So an advertiser comes to DV3 or --

15    or Google Ads and says, "I want to set up a        14:45:31

16    campaign" or "I want to see how many clicks I

17    get or how many conversions I make."  And so,

18    that's an attribute of the advertiser.  And the

19    thing is, you need to be able to sort of link

20    how a user interacts with an ad to then what       14:45:48

21    happens after the user has interacted with the

22    ad.  That's conversions.  And so, it's really

23    fundamentally an advertiser concept.

24              PPID doesn't help with conversions

25    because the ID only exists on the publisher's      14:46:06
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 1    client side, which means we wouldn't see them

 2    server-side, they'll go stale, and we'll just

 3    delete all the data.

 4         Q.  I want to make sure I understand what

 5    you were saying on the -- not on the client          16:38:56

 6    side, but on the Google side.

 7         A.  Uh-huh.

 8         Q.  If a user browses an Incognito

 9    session, closes the session without having

10    signed in, is it your testimony that, within        16:39:13

11    30 days, you believe, Google will delete from

12    Google's servers or its server logs all of the

13    data that Google collected during that

14    Incognito browsing session?

15         A.  It's 30 or 60 days.                         16:39:35

16            MR. ANSORGE:  Objection.  Vague and

17    mischaracterizes prior testimony.

18            THE WITNESS:  What will happen is the

19    ID, after having not been seen for that amount

20    of time, will trigger something called wipeout.     16:39:48

21    Wipeout is a functionality inside Google's ad

22    serving systems -- and it's actually broader

23    across Google, but I'll just focus on the ad

24    serving side, which is the only place Biscotti

25    exists -- when wipeout is triggered for a           16:40:08
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 1    Biscotti cookie, all of the data -- all of the

 2    presence of that Biscotti cookie are, within

 3    logs, anonymized.  And all of the data that is

 4    stored, for example, in ████████ or ██ that is

 5    specifically keyed off of that ID is deleted.      16:40:26

 6            So after that ID goes stale, wipeout

 7    is triggered.  And wipeout is common

 8    functionality that we support for all of our

 9    IDs.  Imagine you were still in the Incognito

10    session, and you see an ad that was served to      16:40:45

11    you, and, "Oh, I was looking at shoes on this

12    other site, and now I'm seeing an advertisement

13    for shoes," there is an ad choices icon in the

14    top right of the ad.  And even in the Incognito

15    session, if you click on that, you'll see that     16:41:03

16    there's basically an opportunity to opt out of

17    personalized ads.

18            Even in the Incognito session, if you

19    opt out of personalized ads, that will

20    basically send a message to Google to say,         16:41:18

21    "Trigger wipeout for this ID."  We try to make

22    it really easy for users who say, "Delete my

23    data" to delete their data.  And it's even

24    easier if they were signed in, but this is a

25    non-signed-in incognito session, so even within    16:41:38
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 1    the session, the user can delete all the

 2    date -- delete all of the data associated with

 3    that.  But if they haven't taken that explicit

 4    step and they just closed the session, because

 5    the ID goes stale, we wait for verification         16:41:51

 6    that this ID isn't used for its 30 or 60 days,

 7    then we trigger the same process that we would

 8    as if they opted out of personalization.

 9    BY MS. BONN:

10        Q.  So in the instance where a user            16:42:08

11    browses Incognito, does not sign into Google,

12    closes the Incognito browsing session, I think

13    you said after 30 days, the Biscotti cookie is

14    anonymized and then all of the data that was

15    keyed off of that ID in ███████ is deleted.         16:42:30

16            Did I have that right?

17        A.  Yeah.

18            MR. ANSORGE:  Objection.

19    Mischaracterizes prior testimony.

20            THE WITNESS:  Yeah.  All of the data        16:42:39

21    and all of the references to the Biscotti ID

22    and the logs is anonymized.  All of the data

23    that is explicitly keyed off of that ID, for

24    example, in ███████, all of those entries are

25    deleted.                                            16:42:58
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 1    BY MS. BONN:

 2         Q.  What do you mean when you say all of

 3    the references to the Biscotti ID are

 4    anonymized?

 5         A.  Basically, a bunch of events that then        16:43:24

 6    get written into storage.  And you can think of

 7    it as a stream of information that's somewhat

 8    structured in terms of all of these events.  We

 9    don't delete events from the logs because then

10    we wouldn't have a full record of, say, the        16:43:39

11    fact an ad request occurred.

12              And instead, anonymization is where if

13    there is an ID in one of these entries that's

14    inside a log, we will then encrypt it and throw

15    away the key, which means you can't actually        16:43:57

16    find it anymore because the value that's stored

17    there doesn't match what it was previously, and

18    because we transformed it using, say,

19    encryption and thrown away the key, there is no

20    way to get the data back.  So it's effectively        16:44:12

21    anonymized.  The thing that is valuable for

22    that is it allows us to see that, "Oh, these

23    two entries are still associated with the same

24    entity, but we can't map that entity to

25    anything anymore."        16:44:27
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